APPENDIX

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): An infectious chimeric nucleic acid molecule of porcine circovirus (PCV1-2) comprising a nucleic acid molecule encoding an infectious, nonpathogenic PCV1 which contains an immunogenic open reading frame (ORF) gene of a pathogenic PCV2 in place of an ORF gene of the PCV1 nucleic acid molecule.

Claim 2 (Original): The chimeric nucleic acid molecule according to Claim 1, wherein the immunogenic PCV2 ORF gene replaces the same ORF gene position in the PCV1 nucleic acid molecule.

Claim 3 (Original): The chimeric nucleic acid molecule according to Claim 2, wherein the immunogenic ORF gene is the ORF2 capsid gene.

Claim 4 (Currently amended): The chimeric nucleic acid molecule according to Claim 3, wherein the chimeric nucleic acid molecule comprises the nucleotide sequence set forth in SEQ ID NO:2[[,]] or its complementary strand ~~or a nucleotide sequence which has at least 95% homology to the nucleotide sequence of SEQ ID NO:2~~.

Claim 5 (Original): The chimeric nucleic acid molecule according to Claim 4, wherein the chimeric nucleic acid molecule contains a mutation in the ORF2 gene comprising a guanine in nucleotide position 328 (C to G), a cytosine in nucleotide position 573 (A to C) or both C to G and A to C mutations in positions 328 and 573, respectively.

Claim 6 (Original): A biologically functional plasmid or viral vector containing the chimeric nucleic acid molecule according to Claim 4.

Claim 7 (Original): The plasmid according to Claim 6 having ATCC Patent Deposit Designation PTA-3912.

Claim 8 (Original): A suitable host cell transfected by a vector comprising the chimeric nucleic acid molecule according to Claim 4.

Claim 9 (Original): An avirulent, infectious chimeric porcine circovirus produced by cells containing the chimeric nucleic acid molecule according to Claim 4.

Claim 10 (Previously presented): The infectious chimeric porcine circovirus according to Claim 9, wherein the cells containing the chimeric nucleic acid molecule are contained in a plasmid having ATCC Patent Deposit Designation PTA-3912.

Claims 11-14 (Canceled).

Claim 15 (Currently amended): A viral vaccine that protects a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising a nontoxic, physiologically acceptable carrier and an immunogenic amount of a member selected from the group consisting of:

(a) a chimeric nucleic acid molecule having the nucleotide sequence set forth in SEQ ID NO:2[[,]] or its complementary strand ~~or a nucleotide sequence having at least 95% homology to the nucleotide sequence of SEQ ID NO:2~~;

(b) a biologically functional plasmid or viral vector containing ~~the~~ a chimeric nucleic acid molecule having the nucleotide sequence set forth in SEQ ID NO:2[[,]] ~~the~~ or its complementary strand ~~or the nucleotide sequence having at least 95% homology to the nucleotide sequence of SEQ ID NO:2~~; and

(c) an avirulent, infectious chimeric porcine circovirus made from a chimeric nucleic acid molecule of PCV1-2.

Claim 16 (Original): The viral vaccine according to Claim 15, wherein the chimeric nucleic acid molecule contains a mutation in the ORF2 gene comprising C to G in nucleotide position 328, A to C in nucleotide position 573 or both C to G and A to C mutations in positions 328 and 573, respectively.

Claim 17 (Canceled).

Claim 18 (Original): The viral vaccine according to Claim 15, wherein the vaccine contains live chimeric porcine circovirus.

Claim 19 (Original): A method of protecting a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising administering to the pig in need of protection an immunologically effective amount of the vaccine according to Claim 15.

Claim 20 (Original): The method according to Claim 19, which comprises administering the chimeric nucleic acid molecule or live chimeric porcine circovirus to the pig.

Claim 21 (Original): The method according to Claim 20, which comprises administering the vaccine parenterally, intranasally, intradermally or transdermally to the pig.

Claim 22 (Original): The method according to Claim 21, which comprises administering the vaccine intralymphoidly or intramuscularly to the pig.

Claim 23 (Withdrawn): A method of preparing the infectious chimeric nucleic acid molecule of PCV1-2 according to Claim 1, which comprises removing an open reading frame (ORF) gene of a nucleic acid molecule encoding an infectious, nonpathogenic PCV1; replacing the ORF gene position of the PCV1 with an immunogenic ORF gene from a pathogenic PCV2; and recovering the chimeric nucleic acid molecule.

Claim 24 (Withdrawn): The method according to Claim 23, wherein the immunogenic PCV2 ORF gene replaces the same ORF gene position of the PCV1 nucleic acid molecule.

Claim 25 (Withdrawn): The method according to Claim 24, wherein the immunogenic ORF gene is ORF2.

Claim 26 (Withdrawn): The method according to Claim 25, wherein the ORF2 gene of PCV2 is obtained from the molecular nucleic acid molecule of PCV2 contained in an expression vector having ATCC Patent Deposit Designation PTA-3913.

Claim 27 (Withdrawn): The method according to Claim 25, wherein the ORF2 gene of PCV2 is excised from a PCV2 after at least 30 serial passages of the PCV2 in PK-15 cells.

Claim 28 (Withdrawn): The method according to Claim 27, wherein the ORF2 gene of PCV2 is excised from the PCV2 after 120 serial passages of the PCV2 in PK-15 cells.

Claims 29-31 (Canceled).

Claim 32 (Original): An infectious reciprocal chimeric nucleic acid molecule of PCV2-1 comprising a nucleic acid molecule encoding an infectious, pathogenic PCV2 which has an immunogenic ORF2 gene from a nonpathogenic PCV1 in place of an ORF2 gene of the PCV2 nucleic acid molecule.

Claim 33 (Previously presented): A viral vaccine that protects a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising a nontoxic, physiologically acceptable carrier and an immunogenic amount of the chimeric nucleic acid molecule of porcine circovirus (PCV1-2) according to Claim 1.

Claim 34 (Previously presented): A viral vaccine that protects a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising a nontoxic, physiologically acceptable carrier and an immunogenic amount of the chimeric nucleic acid molecule of porcine circovirus (PCV1-2) according to Claim 2.

Claim 35 (Previously presented): A viral vaccine that protects a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising a nontoxic, physiologically acceptable carrier and an immunogenic amount of the chimeric nucleic acid molecule of porcine circovirus (PCV1-2) according to Claim 3.

Claim 36 (Previously presented): A method of protecting a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising administering to the pig in need of protection an immunologically effective amount of the vaccine according to Claim 33.

Claim 37 (Previously presented): A method of protecting a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising administering to the pig in need of protection an immunologically effective amount of the vaccine according to Claim 34.

Claim 38 (Previously presented): A method of protecting a pig against viral infection or postweaning multisystemic wasting syndrome (PMWS) caused by PCV2 comprising administering to the pig in need of protection an immunologically effective amount of the vaccine according to Claim 35.